

ABSTRACT

A gas-electric hybrid drive system for a vehicle, includes a first drive train including an input shaft, an
5 output shaft and an electric motor generator interconnecting the input and output shafts with a one to one torque ratio. A planetary gear set is disposed between the electric motor generator and the input shaft, the planetary gear set maintaining the one to one torque ratio between the input
10 shaft, the electric motor generator and the output shaft. A second drive train includes an electric generator interconnected to the output shaft through the planetary gear set and a battery pack is connected to both the first and second motor generator and generator. A controller is
15 provided for causing the generator to provide torque to the output shaft through the motor generator and the planetary gear set for acceleration of output shaft RPM and to charge the battery pack during deceleration and steady state output shaft RPM and for causing said motor generator to utilize
20 excess torque of said input shaft to charge said battery pack.